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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,910	09/13/2005	Tony Amato	745691-37	6657
22204 7590 06/21/2010 NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			EXAMINER ALLEN, CAMERON J	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 06/21/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/522,910

**Applicant(s)**

AMATO, TONY

**Examiner**

CAMERON J. ALLEN

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 36-64 and 66-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-42, 44, 46-49, 55, 66 and 68 is/are rejected.
- 7) ☒ Claim(s) 43, 45, 50-54, 56-64 and 67 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/05/2010 has been entered.

### ***Response to Arguments***

The Examiner notes claims 1-35 have been cancelled, and claims 36-68 are now pending. The independent claims are 36, 57, 64, and 66. Claims 36, 57 and 64 have been amended. Claim 66 is previously presented. Applicant's arguments with respect to amended claims 36, 57 and 64 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments filed 5/05/2010 in regards to claim 66 have been fully considered but they are not persuasive. The Examiner interprets the claim language "comprising" to be open ended and to include but not limit the claim to the limitations. Therefore the figure 7 meets the limitations even as it includes unclaimed devices. (Note the right side transducers or the left transducers separately) The transitional term "comprising", which is synonymous with "including," "containing," or" characterized by," is inclusive or open-ended and does not exclude additional,

unrecited elements or method steps. See, e.g., > Mars Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004) MPEP 2111.03

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by Boucher  
USP 3,672,823.

Regarding claim 36, the Boucher reference discloses a fluid processing apparatus for use in an elongate passage, the apparatus comprising:  
  
a plurality of operating devices for applying ultrasonic energy to fluid within the passage, wherein said operating devices are provided at different axial positions along the elongate passage, wherein axially adjacent operating devices are radially non-parallel and radially non-opposing. (Figure 7 and figure 8)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rawson Francis EP 0 648 531 B1.

Regarding claim 66, the Rawson reference discloses a method of treating fluids comprising placing a fluid processing apparatus into an elongate passage, and passing the fluid through the elongate passage; wherein said fluid processing apparatus includes a plurality of operating devices for applying ultrasonic energy to fluid within the passage provided at different axial positions along the elongate passage, axially adjacent operating devices being radially non-parallel and radially non-opposing. (Figure 7 and 0029) The Examiner notes that the device in figure 7 discloses devices that are axially adjacent operating devices that are radially non-parallel and radially non-opposing and also discloses devices that are opposing and parallel. The Examiner interprets the claim language comprising to be open ended and to include but not limit the claim to the limitations. Therefore the figure 7 meets the limitations even as it included unclaimed devices. (note the right side transducers or the left transducers separately)

Regarding claim 68, the Rawson reference discloses a method according to claim 66 herein the elongate passage is aligned substantially vertically. (Figure 7)

Claims 37-42, 44, 46-49, 55, 66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher USP 3,672,823.

Regarding claim 37, the Boucher reference discloses an apparatus according to claim 36, and also discloses that the transducer (42) is inserted at an angle between 0 and 90 degree. It does not disclose wherein axially adjacent means for applying ultrasonic energy are relatively radial displaced by an angle between  $0^{\circ}$  and  $90^{\circ}$ . (Figure 1 transducer at location 41 appears substantially 45 degree) (Figure 2) The reference does disclose the use of multiple ultrasound devices in convenient locations. (Column 7 lines 40-45) It would have been obvious to one of ordinary skill in the art to modify the figure 2 in the Boucher reference with figure 7, by inserting the transducer in figure 5 at the angle in figure 2, since it will yield the expected result of providing sonic energy as disclosed. (Figure 2 and Figure 7)

Regarding claims 38 and 39, the Boucher reference discloses an apparatus according to claim 37, wherein the angle is from  $90^{\circ}$  to  $50^{\circ}$  (Column 7 line 6)(figure 1 transducer at location 41 appears substantially 45 degree) The reference does disclose the use of multiple ultrasound devices in convenient locations. (Column 7 lines 40-45)

Regarding claim 40, the Boucher reference discloses an apparatus according to claim 36, but does not disclose wherein it comprises five or more operating devices contained within the same elongate passage. The reference does disclose the use of multiple ultrasound devices in convenient locations. (Column 7 lines 40-45) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Boucher device by adding more operating devices, since it has been held that mere duplication of parts is with the ordinary skill of one in the art. MPEP 2144.04

Regarding claim 41, the Boucher reference discloses an apparatus according to claim 36, wherein alternate operating devices are radially aligned. (Figure 24 #160)

Regarding claim 42, the Boucher reference discloses an apparatus according to claim 36, wherein the operating devices are radially symmetrically disposed either side of a line parallel with the longitudinal axis of the elongated passed (Figure 24 #160), but does not disclose wherein the device comprises five operating devices. The reference does disclose the use of multiple ultrasound devices in convenient locations. (Column 7 lines 40-45) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Rawson device by using 5 operating devices, since increasing the number of ultrasound devices would provided the added benefit of increased sonic output and it has also been held that mere duplication of parts is with in the ordinary skill of one in the art. MPEP 2144.04

Regarding claim 44, the Boucher reference discloses an apparatus according to claim 36, but does not disclose wherein axially adjacent means for applying ultrasonic energy are axially spaced by an amount from 30 to 40mm. The reference does disclose the use of multiple ultrasound devices in convenient locations. ((Column 7 lines 40-45) It would have been obvious to one of ordinary skill in the art at the time of the invention to have the ultrasonic device spaced apart 30 to 40 mm, since it has been held that mere relocation of parts is within the ordinary skill of one in the art.

Regarding claim 46, the Boucher reference discloses an apparatus according to claim 36, wherein each operating device preferably comprises an operating member

connected to a vibration member, the operating member being connected to a source of ultrasonic energy. (Column 7 lines 8-17) The Examiner interprets the transducer to be the operating member and excited into resonance to refer to the vibrating member.

Regarding claim 47, the Boucher reference discloses an apparatus according to claim 46, wherein the operating devices have an inner passage through which fluid flowing through the apparatus passes. (Figure 4)

Regarding claim 48, the Boucher reference discloses an apparatus according to claim 46, wherein the inner surface of the inner is arranged to vibrate radial. (0029)

Regarding claim 49, the Boucher reference discloses an apparatus according to claim 47, wherein the longitudinal axis of the inner passage of each operating device is substantially coincident with the longitudinal axis of the elongated passage. (Figure 7)

Regarding claim 55, the Boucher reference discloses an apparatus according to claim 36, wherein each operating device comprises a vibration member having an inner passage. (Figure 1-20)

### ***Allowable Subject Matter***

Claims 43, 45, 50-54, 56-64, and 67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose an apparatus wherein the use of the operating devices is independent. The



prior art does not disclose a means for constraining the fluid flow toward the longitudinal axis of the elongated passage or that the outer conical surface is formed by an outer surface of a funneling device provided in the passage. The prior art does not disclose one or more nozzles are housed in a wall of a chamber through which the extender element projects or that the nozzles contain actuated valves or that the nozzles have controlled automatic response to a draw in power from the operating device. It does not disclose that the operating devices are arranged with their operating members along a common axis, adjacent extender elements being angularly offset with respect to one another. The prior art also does not disclose the method wherein the fluid is sewage sludge.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAMERON J. ALLEN whose telephone number is (571)270-3164. The examiner can normally be reached on M-Th 9-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJA

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797